ATTACHMENT 1

part 2

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
C4GT, LLC	)	
	)	
For a Certificate of Public Convenience and Necessity to Construct and Operate an Electric Generating Facility in Charles City County, Virginia pursuant to Va. Code § 56-580D	)	Case No. PUE-2016-00104

PUBLIC VERSION

ATTACHMENT 1

ON BEHALF OF

C4GT, LLC

SEPTEMBER 14, 2016

ATTACHMENT 1

SECTION I - GENERAL INFORMATION, ELECTRIC GENERATING FACILITY INFORMATION AND DOCUMENTS TO BE INCLUDED IN THE APPLICATION FOR ELECTRIC GENERATING FACILITIES GREATER THAN 50 MW (SOURCE: 20 VAC 5-302-20)

1. **Legal name as well as any trade name.**

   The legal name of the Applicant is C4GT, LLC ("C4GT" or "Applicant"). C4GT does not have a trade name.

2. **Description of the applicant's business structure, identifying the state authorizing such structure and the date thereof, e.g., if incorporated, the state and date of incorporation; if a limited liability company, the state issuing the certificate of organization and the date thereof.**

   C4GT is a limited liability company organized under the laws of the state of Delaware. C4GT was formed on February 5, 2016. C4GT is registered to transact business in the Commonwealth of Virginia.

3. **Name and business addresses of all principal corporate officers and directors, partners, and LLC members.**

   The business address for C4GT and C4GT's sole member is 23955 Novi Rd, Novi, Michigan. **[BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL]**

4. **Financial information for the applicant, or principal participant or participants in the project. If the applicant or principal participant or participants is a private entity, financial information should include an analysis of the entity's financial condition and audited financial statements for the two most recent fiscal years. If the applicant or principal participant or participants is a public company, financial information should include the entity's most recent stockholder report and most recent Securities and Exchange Commission Form 10-K.**

   C4GT was formed for the purpose of developing, constructing, owning and operating a 1,060 MW electric generating facility in Charles City County, Virginia (the "Facility"). C4GT is a private company that was formed in 2016 and does not yet have audited financial statements. The development of the Facility will be funded by Ares Charles City, LLC which was established for the purpose of investing in C4GT. Ares Charles City, LLC is an affiliate of Ares EIF Management, LLC ("Ares EIF"). Ares EIF has a 29-year track record investing in power and energy infrastructure assets. Since inception, Ares EIF-managed funds have made approximately 70 equity investments in nearly 130 different power and energy infrastructure assets with a combined underlying enterprise value exceeding $20 billion. In the last decade alone, funds managed by Ares EIF have invested in more than 8,200 gross MW of greenfield

projects representing nearly $10 billion of capital costs. Ares EIF-managed funds are experienced investors in new-build generation and transmission in the United States.

5. Prefiled testimony in support of the application.

C4GT's request for approval and certification of the Facility is supported by the attached prepared direct testimony of Anand Gangadharan, President of C4GT and the President and Chief Executive Officer at NOVI Energy, LLC ("NOVI Energy") and Thomas O. Pritcher, a Senior Engineer with Environmental Consulting and Technology, Inc. A copy of Mr. Gangadharan's prepared direct testimony is attached as Exhibit 1.

The direct testimony of Thomas O. Pritcher addresses environmental impact and permitting aspects of the Facility. Mr. Pritcher sponsors Section 12 (a) through (l) of Attachment 1. A copy of Mr. Pritcher's prepared direct testimony is attached as Exhibit 2.

6. A discussion of the applicant's qualifications, including:

a. A summary of other projects developed and managed by the applicant. Include location, status, and operational history.

C4GT is a special-purpose entity organized solely to develop, construct, own, and operate the Facility. C4GT has retained NOVI Energy to support and manage all development actions for this project. NOVI Energy's management team has over 100 years of collective experience in developing electric generating projects.

NOVI Energy provides a broad range of services in energy management and energy infrastructure development for industrial, institutional, commercial and utility companies located throughout the world. NOVI Energy has extensive and proven experience in the full spectrum of development activities necessary to develop the Facility, including conceptualization and design, as well as engineering, construction, and operation of electric generating facilities. A description of NOVI Energy's project experience (including the experience of its management team) is included as Exhibit 3, titled "NOVI Energy Project References".

NOVI Energy Projects include:

South Boston Energy LLC – a 49.9 MW biomass fueled power generation facility utilizing waste wood chips, a greenfield development by NOVI Energy. This project is located in South Boston, Virginia. This facility has been in commercial operation since December 2013 and is owned and operated by Northern Virginia Electric Cooperative.

Fremont Community Digester LLC was developed by NOVI Energy, a 3 MW, 100,000 TPY waste to energy biogas plant utilizing multiple feedstock streams. The plant achieved commercial operations in 2012 and was managed by NOVI Energy for two years.

[BEGIN CONFIDENTIAL

[redacted]

END CONFIDENTIAL]

b. A detailed description of the organizational structure of the applicant. Include the division of ownership, if applicable.

C4GT is a limited liability company organized under the laws of the state of Delaware. C4GT was formed on February 5, 2016 for the purpose of developing, constructing, owning, and operating the Facility. **[BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL]**

c. A description of any affiliation or affiliations with an incumbent electric utility as defined in § 56-576 of the Code of Virginia.

C4GT is not affiliated with an incumbent electric utility as defined in § 56-576 of the Code of Virginia.

7. Specific information about the site for the proposed facility, including:

a. A written description of the location including identification of the city or county in which the facility will be constructed. Such description should be suitable for newspaper publication and be sufficient for identification of affected areas.

The Facility will be located at 3001 Roxbury Road, Charles City, Virginia, in Charles City County – Tax map # 7-12-B. The site is located at 37.447097 ° N, Latitude, 77.167304 ° W Longitude, [37.447097- 77.167304].

The site is located along Roxbury Road (State Route 106), approximately 2,000 feet north and west of its intersection with Chambers Road (State Route 685). The site is located approximately one half (1/2) mile from the Roxbury Industrial Park, and less than one mile from the existing Virginia Electric and Power Company ("VEPCO," d/b/a Dominion Virginia Power) Chickahominy substation.

b. A description of the site, and a depiction on topographic maps of the proposed site.

The site is comprised of approximately 88 undeveloped acres, consisting of a recently logged area. Access to the site is provided by Roxbury Road (State Route 106) which runs along the entire East portion of the site.

The site is crossed by (i) a 16 inch natural gas transmission pipeline owned by Virginia Natural Gas ("VNG"), a wholly owned subsidiary of AGL Resources, and (ii) 500 kV and 230 kV electrical transmission lines owned by VEPCO.

The topography of the site is level to gently rolling. A topographic map of the site is attached as Exhibit 4, an aerial photograph of the proposed site is provided as Exhibit 5 and a United States Geological Survey ("USGS") Quadrangle map is provided as Exhibit 6 to this Attachment 1.

c. The status of site acquisition (i.e., purchase option, ownership, etc.).

C4GT holds an option to purchase the site from the Charles City County Board of Supervisors. C4GT will exercise the option and purchase the land prior to the commencement of construction activities.

d. A description of any applicable local zoning or land use approvals required and the status of such approvals.

The Charles City County Board of Supervisors approved a Special Use Permit regarding the site on May 28, 2015 (#SUP-03-2015), as amended on December 9, 2015 (#SUP-04-2015). A copy of the Special Use Permit issued on May 28, 2015, as amended on December 9, 2015 is attached as Exhibit 7. The SUP imposes 28 conditions concerning, among other things: construction activities, maintenance activities, site plan approval, building and structure permits, inspections, lighting, entrance ways, parking areas, dust, security fencing, signage, landscaping, fences, traffic management, erosion and sediment control, stormwater management, water usage, noise, and safety.

The site was rezoned from Light Industrial (M-1) to Heavy Industrial (M-2) on May 28, 2015. *See* SUP attached as Exhibit 7.

8. Specific information about the proposed facility, including:

a. Description of all major systems, facility configuration and expected suppliers of major components.

Attached as Exhibit 8 is a rendering of the Project. The following provides a description of the Facility and its key components and systems.

Overall Facility Description

The Facility is a two-on-one combined cycle electrical generating station, with a net nominal generating capacity of 1,060 MW at 95°F ambient temperature, consisting of two natural gas-fired combustion turbine generators (CTGs) with downstream natural gas supplementally-fired heat recovery steam generators (HRSGs). The steam that is generated in the HRSGs is used in a steam turbine generator (STG) for additional power output and increased thermal cycle efficiency.

Combustion Turbines

C4GT is seeking the option to install either of the following H-class combustion turbines: the General Electric 7HA.02 or the Siemens SGT6-8000H (1.4+) to supply the power island. The power island consists of a combustion turbine, steam turbine, and HRSG. These heavy-duty H-class turbines represent the latest in combustion turbine technology. These machines are designed for a shorter startup time and higher turndown. Combustion turbines will be fired with natural gas, and will be furnished with low NO_x burners. The combustion turbines will be furnished with evaporative inlet air cooling to lower the inlet air temperature during periods of high ambient temperature. The combustion turbines are arranged in a 2 on 1 arrangement with a single steam turbine.

Steam Generation

Each HRSG will be located downstream of the associated gas turbine to capture the heat of the turbine exhaust for steam production. Each HRSG is a triple-pressure with reheat design, and it is anticipated that it will be provided by the combustion turbine manufacturer as part of the power island. Each HRSG will include a natural gas-fired duct burner to increase steaming capacity. Each HRSG will be furnished with superheating, reheating, and economizer sections required to achieve a highly efficient removal of heat from the combustion turbine gas stream, and achieve a low stack gas temperature..

Air Emissions Control Equipment

Nitrogen oxide (NO_x) emissions from each of the combined cycle combustion turbines and associated duct-fired HRSGs will be controlled by dry low-NO_x burners in the combustion turbines, with selective catalytic reduction (SCR) in the HRSG. The SCRs will be supplied with ammonia from an aqueous ammonia storage tank, located on site. The ammonia storage tank will contain 19% aqueous ammonia, which will be vaporized and routed to the ammonia injection grid located upstream of the SCR catalyst section in each HRSG. An oxidation catalyst section located within each HRSG will reduce the quantity of carbon monoxide (CO) and volatile organic compounds (VOC) exiting the stack. Particulate matter and sulfuric acid emissions are minimized by the use of pipeline quality natural gas as fuel.

Steam Turbine Generator

The steam turbine generator will be provided by the combustion turbine manufacturer as part of the power island. The steam turbine will have a nominal generating capacity of 356 – 473 MW (depending on the manufacturer selected), and will be a single shaft turbine with high pressure/intermediate pressure (HP/IP) turbine and low pressure (LP)

turbine discharging to the condenser. Main steam will enter the HP turbine, and will exit back to the cold reheat section of each HRSG. Hot reheat will enter the IP section of the turbine, and will exhaust to the LP section of the turbine.

Steam Cycle Makeup and Feedwater Systems

Steam cycle makeup will be introduced to the cycle through the condenser as demineralized water. Raw water is anticipated to be received from the James River and will be filtered, treated and stored on site.

The Boiler Feedwater System provides water to the high-pressure (HP) and intermediate-pressure (IP) economizers and low pressure drum of each HRSG. The Boiler Feedwater System also supplies water for fuel gas performance heating and desuperheaters as required.

Auxiliary Boiler

The auxiliary boiler provides backup steam to the Facility during unit outage periods and provides steam for turbine and piping warmup, HRSG warmup, and condenser vacuum maintenance. The capacity of the auxiliary boiler is estimated at 80,000 lb/hr of 150 psig steam, with a 105 MMBtu/hr (HHV) natural gas-fired low NOx burner. **[BEGIN CONFIDENTIAL** [redacted] **END CONFIDENTIAL]**

Fuel Supply

The Fuel Gas Supply System will receive pipeline quality natural gas from the gas supplier's pipeline interface location, located on the site. The Fuel Gas will be metered, regulated, heated, and delivered to the combustion turbine as the primary fuel.

Water Treatment

The primary water consumption will be for makeup to the cooling tower. Secondarily, water will be used for cycle makeup, which will be produced onsite by reverse osmosis trains. Raw water is anticipated to be received from the James River.

The raw water is pumped to the clarifier by the raw water transfer pumps. Chemicals are added as necessary to properly condition the water and precipitate suspended solids. Solids formed from the physical-chemical process are intermittently blown down and collected for disposal.

Clarified water is supplied to the service water treatment system from the raw water supply and treatment system.

Potable Water

Potable water will be supplied by a well to be located on the project site. Potable water will be used for sanitary fixtures, hand washing, and for showers.

Waste Water Collection and Treatment

Sanitary sewage generated on the site will be discharged into an onsite septic system. Water treatment drains, oil/water separator effluent, and other miscellaneous Facility drains will flow to a Wastewater Collection Sump and along with cooling tower blowdown will be forwarded to the James River outfall.

Fire Protection

The Fire Protection Water Supply System provides water for site and equipment fire protection. Fire protection water is supplied from the service/fire water storage tank. An electric motor driven pump and backup diesel engine driven pump will furnish fire water from the service/fire water storage tank. Hydrants will be located to produce full stream coverage of all site structures.

[BEGIN CONFIDENTIAL [redacted] **END CONFIDENTIAL]**

Enclosed Structures

Enclosed structures consist of the Administration/Warehouse Building, Water Treatment Enclosure, Cooling Tower Chemical Feed Enclosure, Steam Turbine Enclosure, Auxiliary Boiler Enclosure, Power Distribution Centers, Fire Pump Enclosures, and Boiler Feed Pump Enclosure.

The Steam Turbine Enclosure will be a conventional steel braced frame structure. The remaining structures will likely be pre-engineered metal buildings. Buildings will be furnished with heating, ventilating and air conditioning systems (as required), lighting and electrical power. Buildings will be designed and constructed in accordance with all applicable laws and regulations of the federal government and applicable state and local codes and ordinances.

Lighting

Illumination for roadways, parking areas, and other outdoor Facility yard areas shall be provided. Where structures for mounting the light fixtures are not available, lighting poles shall be provided.

Control and Information Systems

The objective of the control and information systems is to facilitate plant operations by ensuring personnel safety, equipment protection, adequate operation, and plant availability.

These functions will be provided by a microprocessor-based Distributed Control System (DCS). The DCS shall employ functional distribution and redundancy to achieve a high level of system reliability. System control strategies shall be implemented using software programmable, digital computing techniques.

Control of the balance-of-plant equipment shall be through the DCS. Stand-alone programmable logic controllers (PLCs) or proprietary microprocessor-based systems will interface with the DCS for supervisory control, alarm, and trending purposes.

b. Nameplate capacity, gross dependable capacity, net dependable capacity and expected seasonal heat rates.

[BEGIN EXTRAORDINARILY SENSITIVE INFORMATION]

[redacted]

[redacted]

[END EXTRAORDINARILY SENSITIVE INFORMATION]

The heat rate of the Facility will vary at the time of dispatch as a function of ambient air temperature, relative humidity, dispatch at other than full load, and other factors.

c. Estimated costs, and schedule for construction, testing and commercialization.

The estimated cost of the Facility is currently anticipated to be approximately **[BEGIN EXTRAORDINARILY SENSITIVE INFORMATION]** [redacted] **[END EXTRAORDINARILY SENSITIVE INFORMATION]**

Construction of C4GT's Facility is expected to begin in the fourth quarter of 2017. The following table provides estimated milestone dates that are associated with the construction, testing and commissioning of the Facility. The CPCN related dates are subject to the Commission's approval of this Application.

<u>**Milestones**</u>	<u>**Dates**</u>
Receive CPCN	1st Quarter 2017
Enter PJM Capacity Auction for 2020/2021	2nd Quarter 2017
Commence Construction	4th Quarter 2017
Commence Commissioning	4th Quarter 2019
Commercial Operation	2nd Quarter 2020

9. A description of the fuel supply arrangement for the proposed facility. The description should detail:

a. Fuel type, quality and source or sources.

C4GT anticipates using natural gas of standard pipeline quality as the sole fuel for the Facility, received from various production basins in the United States and transported through interstate natural gas pipelines, and delivered by local natural gas distribution company infrastructure.

b. Transportation and fuel storage arrangements for fuel delivery.

Acquisition of natural gas supply and arrangements for its transportation and delivery to the plant location is expected to be performed by an independent fuel manager.

The Project will receive pipeline-quality natural gas delivered to the site by an existing high pressure 16 inch diameter pipeline owned by VNG. The VNG pipeline traverses the site and the interconnection delivery point will be located on the site.

The Applicant is presently in discussions with VNG concerning the appropriate rates, terms and conditions for transportation firm service and interconnection at the site.

It is anticipated that the natural gas supply will be delivered to the Facility through the VNG pipeline from the following interstate pipeline transmission systems: Transcontinental Gas Pipe Line Company, LLC ("Transco"), Dominion Transmission, Inc.'s pipeline system, ("DTI") and the Columbia Gas Transmission Company ("TCO").

c. Identification of all new pipeline facilities, if any, needed to serve the proposed facility.

[BEGIN CONFIDENTIAL [redacted] [END CONFIDENTIAL]

d. Ownership of any such facilities.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

e. Plans for constructing such facilities.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

f. The location and routing of any such facilities.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

g. The size of such facilities.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

h. Whether such facilities will be utilized to provide or enhance fuel supplies to other entities.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

i. Identification of the pipeline or gas distribution company and the rate schedule the applicant intends to utilize in order to serve the proposed generating facility. Identification of whether the service is firm or interruptible.

[BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

j. If the applicant is to be served by firm capacity from an interstate pipeline, identification of whether the capacity is to be acquired through the construction of new facilities, via capacity that is currently unsubscribed or through capacity purchased on the secondary market.

[BEGIN CONFIDENTIAL] [redacted]

[END CONFIDENTIAL]

k. If pipeline capacity is to be constructed, identification of the Federal Energy Regulatory Commission docket number or any open season that has been held by the interstate pipeline.

Not applicable.

l. If capacity is to be purchased on the secondary market, identification of the availability of secondary market capacity in the plant's market area during days that the plant intends to operate.

C4GT's fuel manager will be responsible for providing firm supply to pipelines interconnecting with VNG.

m. Identification of the proposed in-service date of any facilities to be constructed.

[BEGIN CONFIDENTIAL]
[END CONFIDENTIAL]

n. In general terms, description of the availability of fuel supplies required to serve the proposed facility.

[BEGIN CONFIDENTIAL] [END CONFIDENTIAL] These interstate natural gas pipelines provide access to natural gas production areas that include the Texas / Mid Continent, Gulf Coast, and Appalachian regions. The Potential Gas Committee estimates that there is 2,853 trillion cubic feet (TCF) of total available future natural gas supplies from these production areas [http://www.potentialgas.org/press-release].

10. A discussion of economic impacts (both positive and negative), of the project. The discussion should address the tax and employment implications of the project.

The Facility will have a significant positive impact on the local economy. For example, the Facility is expected to provide substantial local and regional benefits from highly efficient electric generation, adding hundreds of millions of dollars in private infrastructure investment in Virginia, and providing substantial annual property taxes once operational.

The Facility construction is anticipated to take approximately 30-33 months. At peak construction approximately 600-800 workers will be on site. During operation, the Facility will require approximately 18-22 full-time employees. Jobs during construction and operation would

yield millions of dollars in payroll, and have significant indirect economic benefit locally and regionally.

[BEGIN EXTRAORDINARILY SENSITIVE INFORMATION] [redacted] **[END EXTRAORDINARILY SENSITIVE INFORMATION]**

11. A list of other local, state or federal government agencies whose requirements must be met in connection with the construction or operation of the project and a statement of the status of the approval procedures for each of these agencies.

a. Charles City County
   i. Special Use Permit Approval obtained – a Special Use Permit from Charles City County regarding the site was approved by the Charles City County Board of Supervisors on May 28, 2015 (#SUP-03-2015), and amended on December 9, 2015 (#SUP-04-2015).
   ii. Water Quality Impact Assessment (WQIA) was approved for anticipated location of the water intake and outfall structures. Currently C4GT is working with Charles City County to determine if WQIA is needed for the site.
   iii. The Facility will also need various other approvals from Charles City County, that will be applied for at the appropriate time, including: land disturbance approval, site plan approval, building and structure permits, potable water and septic plans, erosion and sediment control plan, and a stormwater management plan.

b. Federal Aviation Administration determinations and approvals. FAA notice for stack construction is expected to be submitted in October, 2016.

c. Federal Energy Regulatory Commission. C4GT intends to file for Exempt Wholesale Generator Status from the Federal Energy Regulatory Commission and for market-based rate authorization for wholesale sales of electric energy, capacity and ancillary services. These FERC filings will occur prior to generating power from the Facility.

d. Environmental. A list of government agencies and the status of approvals whose requirements must be met in connection with the environmental impacts of the Facility are addressed in response to item 12 below, which is incorporated herein by reference.

12. An analysis of the environmental impact of the project shall be provided sufficient to enable the commission to make the determinations required by §§ 56-46.1 and 56-580 D of the Code of Virginia.

See the "Environmental Assessment" attached as Exhibit 12 for required information and analysis regarding the Facility's environmental impact as required by 20 VAC 5-301-20 (a) through (l). C4GT's responses to 20 VAC 5-301-20 (m) and (n) are set forth below:

(m) Geology and mineral resources, caves, and sinkholes.

The geology of the site is suitable for construction of the Facility. The specific area on which the site will be constructed was evaluated by a consultant, Black & Veatch, and determined to be sufficient, subject to final geotechnical and foundation recommendations.

(n) Transportation infrastructure.

There is not expected to be any significant incremental impact on existing transportation infrastructure from the Facility as any transportation needs into C4GT is already provided through existing transportation infrastructure. The Virginia Department of Transportation will review and approve the Charles City County Site Plan amendment that will be submitted in connection with the Project.

13. A general discussion of reliability impacts including:

a. A description of transmission interconnection requirements and needed interconnection facilities.

The site is located less than one mile from the existing VEPCO Chickahominy substation. C4GT anticipates that the Facility will interconnect to VEPCO's transmission grid at either the 230 kV or 500 kV voltage levels at the Chickahominy substation via new lines from the site.

b. A description of the potential impact of the proposed facility on the interconnected transmission system. Discussion should identify and summarize any system impact studies or proposed studies.

The Applicant submitted an Interconnection Application to PJM Interconnection, L.L.C. ("PJM") on March 31, 2016. The Facility is identified as number AB2-068, in the PJM queue. The Facility is subject to the PJM Large Generator Interconnection tariff and to VEPCO's generator interconnection requirements. In August 2016, PJM completed its Feasibility Study which assesses the practicality and cost of incorporating the Facility's capacity into the PJM system. The PJM Feasibility Study is attached as Exhibit 10 to the Attachment 1. The PJM Feasibility Study evaluated the Facility for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners) and did not identify any potential network impacts regarding the 500 kV option or the 230 kV option, with the exception of certain new

circuit breakers (concerning the 230 kV option) that were found to be over-duty and could be mitigated by replacing twelve 230kV breakers with 63kA breakers. *(See,* PJM Feasibility Study at pages 5-6 for the 500 kV option and pages 9-11 for the 230 kV option)

As part of the PJM Feasibility Study process, VEPCO assessed the impact of the Facility's injection of 1,060 MW of Capacity and Energy into VEPCO's transmission system, for compliance with NERC Reliability Criteria on VEPCO's transmission system. The result of these assessments concluded "no deficiencies identified" for each of several studied categories. (See, PJM Feasibility Study at page 7 for the 50() kV option, and at page 12 for the 230 kV option).

Moreover, as part of its generation impact analysis, VEPCO evaluates the impact that a proposed new generation resource will have under maximum generation conditions, stress system conditions and import/export system conditions. The results of these import and export studies indicate that the proposed interconnection will not impact VEPCO's import or export capability. (See, PJM Feasibility Study at page 8 for the 500 kV option, and at page 12 for the 230 kV option).

c. A description of anticipated services (ancillary services, re-dispatch, energy imbalance, etc.) that may be provided to any transmission service provider.

No additional services are anticipated.

d. A discussion of existing and expected generation reserves in the region and the impact of the proposed facility on such reserves.

There have been a great amount of generation retirements between 2013 and 2015, which have reduced the PJM capacity reserves. The project will contribute to PJM's ability to meet capacity needs by increasing the capacity reserve. The Project will provide a consistent, reliable source of power that will support the PJM transmission system.

Between 2011 and 2020 approximately 28,000 MW of capacity is expected to have been retired in PJM, which may result in shrinking reserve margins that will need to be met by new generators such as C4GT.[1] According to the 2014 Virginia Energy Plan, over 14,000 MWs of new generation capacity is required by 2024 in Virginia alone to keep pace with robust demand growth that exceeds the balance of the PJM electricity market.[2] Virginia currently has approximately 26,000 MWs of net summer electric generating capacity, comprised of 37% natural gas, 21% coal, 16% hydroelectric/pumped storage, 14% nuclear, and 9% petroleum fired-sources.[3] As an efficient new natural gas-fired combined cycle generator, C4GT is expected to realize a low levelized cost of energy relative to other technologies and produce low-cost power that will benefit Virginia consumers.[4]

[1] PJM, "2016 State of the Market Report for PJM: January through June," August 2016. Section 12, Page 480.
[2] Virginia Department of Mines, Minerals and Energy, "Virginia Energy Plan," October 2014. Section 2, Page 14.
[3] United States Energy Information Administration (EIA), "Virginia State Electric Profile," released March 24, 2016 for 2014. https://www.eia.gov/electricity/state/Virginia.
[4] Id., Section 2, Page 13.

The low emissions rate vs. coal and existing natural gas generators should help Virginia comply with any future emissions mandates such as the proposed Clean Power Plan and together with renewables can help to fill a void left by retiring coal-fired generation (approximately 2,700 MW of Virginia coal-fired generation is scheduled for retirement).[5] Furthermore, "Virginia utilities do not own in-state generation capacity sufficient to meet their territory's peak load plus the reserve required by the Federal Energy Regulatory Commission (FERC)."[6] As an in-state resource located close to the load that it serves, the 1,060 MW C4GT Facility will improve reliability, with its economic benefits retained in-state.

14. A discussion of whether the proposed facility is not contrary to the public interest. The discussion shall include, but is not limited to, an analysis of any reasonably known impacts the proposed facility may have upon reliability of service to, and rates paid by, customers of any regulated public utility for service in the Commonwealth, including water service, gas distribution service, electric distribution service, and electric transmission service.

The following provisions support a finding that the Facility is not contrary to the public interest:

- The Charles City County Board of Supervisors has approved a special use permit to locate up to a 1,100 megawatt combined cycle natural gas power plant on the site.

- The SUP imposes 28 conditions concerning, among other things: construction activities, maintenance activities, site plan approval, building and structure permits, inspections, lighting, entrance ways, parking areas, dust, security fencing, signage, landscaping, fences, traffic management, erosion and sediment control, stormwater management, water usage, noise, and safety.

- The Facility will provide substantial economic benefits by providing an increased tax base that will benefit the Commonwealth of Virginia, Charles City County and the surrounding area. **[BEGIN EXTRAORDINARILY SENSITIVE INFORMATION** [redacted] **[END EXTRAORDINARILY SENSITIVE INFORMATION]** In addition, individual and corporate income tax revenue will augment the economic stability of the region. The Facility construction is anticipated to take approximately 30-33 months. C4GT anticipates that a workforce of approximately 600 – 800 workers will be engaged during the Facility's peak construction period. C4GT also anticipates that approximately 18 - 22 full time employees will be required to operate and maintain the Facility. All of these workers and employees will add direct and indirect economic benefits to the Charles City County region. *See, e.g.* Application of Doswell Limited Partnership, Case No. PUE-2015-00127 ("*2016 Doswell*"), Final Order (June 1, 2016) finding that the Doswell Facility is likely to "produce economic benefits in terms of jobs, taxes, and revenues"; Application of Green Energy Partners/Stonewall LLC, Case No. PUE-2013-00104, ("Green Energy Partners") finding that "the Project is likely to produce significant economic benefits in terms of jobs, taxes, and

[5] Id., Item 8, Page 84.
[6] Id., Section 2, Page 10.

revenues."; Application of Tenaska Virginia Partners, Hearing Examiner's Report at 32 (Oct. 23, 2001), finding that the "additional tax revenue and jobs generated by the Facility will benefit Fluvanna County's economy," and Application of CPV Warren, LLC, For a certificate of public convenience and necessity for electric generation facilities in Warren County, Virginia, Case No. PUE-2002-00075, Final Order at 17, (March 13, 2003), finding that the facility is not contrary to the public interest as it would provide economic benefits.

- While substantial benefits accrue to the Commonwealth of Virginia, Charles City County, and the surrounding area, C4GT bears all of the business risk associated with the Facility, not the electric ratepayers of the Commonwealth. See, *2016 Doswell* Hearing Examiner Report at 12 and CPV Application, Final Order at 17, finding that the facility is not otherwise contrary to the public interest in that "rates for the regulated public utility will not be impacted."

- The Facility will have no material adverse effect on the reliability of electric service provided by any regulated public utility. PJM completed its Feasibility Study which assesses the practicality and cost of incorporating the Facility's capacity into the PJM system. The PJM Feasibility Study evaluated the Facility for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners) and did not identify any potential network impacts regarding the 500 kV option or the 230 kV option, with the exception of certain new circuit breakers (concerning the 230option) that were found to be over-duty and could be mitigated by replacing twelve 230 kV breakers with 63 kA breakers. As part of the PJM Feasibility Study process. VEPCO assessed the impact of the Facility's injection of 1,060 MW Capacity and Energy into VEPCO's transmission system, for compliance with NERC Reliability Criteria on VEPCO's transmission system. The result of these assessments concluded "no deficiencies identified" for each of several studied categories. Moreover, as part of its generation impact analysis, VEPCO evaluated the impact that a proposed new generation resource will have under maximum generation conditions, stress system conditions and import/export system conditions. The results of these import and export studies indicate that the proposed interconnection will not impact VEPCO's import or export capability.

- The Facility supports the 2010 and 2014 Virginia Energy Plan goals by providing required generating capacity located in the Commonwealth. The 2010 Virginia Energy Plan established a goal to increase in-state production of energy by 20 percent through 2020. *See*, 2010 Virginia Energy Plan at 8-1. The 2014 Virginia Energy Plan reasserted this need for additional generation to serve Virginia utilities "Virginia utilities must add generation (or reduce demand) by over 14,000 megawatts of new generation capacity by 2024 to keep up" with anticipated future electric demand in Virginia utilities service territories. *See*, 2014 Virginia Energy Plan at 2- 13, 2-14.

- The Facility will assist meeting the rising demand for electricity in the region, using environmentally responsible electric generation technology, by adding needed energy to the electric energy market through PJM. (See, *2016 Doswell* Hearing Examiner Report at 12).

- As an in-state resource, the 1,060 MW C4GT Facility will improve reliability and its economic benefits will be retained in the Commonwealth of Virginia. Between 2011 and 2020 approximately 28,000 MW of capacity is expected to have been retired in PJM, which may result in shrinking reserve margins that will need to be met by new generators such as C4GT. As an efficient new natural gas-fired combined cycle generator, C4GT is expected to realize a low levelized cost of energy relative to other technologies and produce low-cost power that will benefit Virginia consumers. The low emissions rate vs. coal and existing natural gas generators should help Virginia comply with any future emissions mandates such as the proposed Clean Power Plan and together with renewables can help to fill a void left by retiring coal-fired generation (approximately 2,700 MW of Virginia coal-fired generation is scheduled for retirement). Furthermore, "Virginia utilities do not own in-state generation capacity sufficient to meet their territory's peak load plus the reserve required by the Federal Energy Regulatory Commission (FERC)." [*See*, supporting footnotes 1- 6 *supra.*]

- The Facility will enhance the competitive market for wholesale electricity in the region. "[C]ompetition is benefited by the construction and operation of generation that is owned or controlled by a company other than an incumbent electric Utility ... [S]uch capacity has a desirable effect on competition." *See*, Application of CPV Warren, LLC, Hearing Examiner's Report (Nov. 25, 2002) *See also* Application of Tenaska, Order at 15 (Jan. 16, 2002), finding that "the proposed facility should help develop wholesale competition in the region which, in turn, should help advance the goal of competition in the Commonwealth."

- The Facility will be designed, constructed and operated in a way to minimize any adverse environmental impact as more fully described in the Environmental Assessment provided in response to Section (12) above.

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APPLICATION OF

C4GT, LLC

for a Certificate of Public Convenience and Necessity to Construct and Operate an Electric Generating Facility in Charles City County, Virginia pursuant to Va. Code § 56-480D	)))))	**Case No. PUE-2016-00000104**

Index of Exhibits to Attachment 1

Exhibit

1. Direct Testimony of Anand Gangadharan
2. Direct Testimony of Thomas O. Pritcher
3. NOVI Energy Project References
4. USGS Topographic Map of Site
5. Aerial Photograph of Site
6. USGS Quadrangle Map
7. Special Use Permit
8. Rendering of the Project
9. Environmental Assessment
    - A. USGS Topographic Map of Site
    - B. Plot Plan of Facility with GE Arrangement
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    - G. Public Notice of Air Permit Application
10. PJM Feasibility Study